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# **Gender and Youth Offending**

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**Number 2  
The Edinburgh Study of Youth Transitions and Crime**

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## KEY FINDINGS

There is a substantial difference between boys and girls in levels of serious delinquency, but a relatively small difference in levels of broad delinquency, including trivial as well as serious incidents.

Among young people included in the Edinburgh Study, delinquency increased sharply through sweeps 1 to 3 (age 12 to 14) but then started to decline. The increase was greater among girls than among boys, so that the gender gap in offending was smallest around the age of 14, and then began to increase again.

Girls are involved in certain specific forms of delinquency—theft from home, writing graffiti, and truancy—more often than boys. Certain specific forms of delinquency—carrying a weapon, housebreaking, robbery, theft from cars, cruelty to animals—are *much* more common among boys than girls.

The explanations for delinquency involve many different factors in at least six different domains of explanation. For the most part the explanatory model for broad delinquency is much the same among boys and girls. The explanatory factors captured by the Edinburgh Study explain all of the difference in broad delinquency between boys and girls at the age of 15.

The high rates of broad delinquency among boys compared with girls are largely explained by situational opportunities and peer influence, higher rates of crime victimization, and weakened tutelage and moral beliefs.

By contrast, boys remain much more likely to be involved in serious delinquency at the age of 15, even after taking account of 20 explanatory variables captured by the Edinburgh Study. This finding suggests that the difference in serious delinquency between boys and girls is caused by a factor not measured in the study.

In spite of some broad similarities, there are substantial differences between the models needed to explain serious delinquency in boys and girls.

The findings are consistent with the theory that broad delinquency tends to be limited to adolescence, whereas serious offending is more likely to persist throughout the life course, and to be caused by deep-seated neuropsychological deficits, which are more common in boys than girls.

## INTRODUCTION

This paper explores the relationship between gender and patterns of offending in young people aged 12-15. It draws on findings from the Edinburgh Study of Youth Transitions and Crime (the Edinburgh Study), a longitudinal research programme exploring pathways into and out of offending among a single cohort of young people who started secondary school in the City of Edinburgh in 1998. The key aims and methods of the study are summarized below.<sup>1</sup>

### *Aims of the programme*

- To investigate the factors leading to involvement in offending and desistance from it
- To examine the striking contrast between males and females in criminal offending
- To explore the above in three contexts:
  - Individual development
  - Interactions with formal agencies of control
  - The social and physical structures of neighbourhoods
- To develop new theories explaining offending behaviour and contribute to practical policies targeting young people

### *Overview of methods*

- Self report questionnaires (annual sweeps)
- Semi-structured interviews (40 undertaken in sweep 2)
- School, social work, children's hearings records (annual sweeps)
- Teacher questionnaires (1999)
- Police juvenile liaison officer and Scottish criminal records (from 2002)
- Parent survey (2001)
- Geographic information system

### *Participating schools*

- All 23 state secondary schools
- 8 out of 14 independent sector schools
- 9 out of 12 special schools

### *Response Rates*

- Sweep 1 96.2% (n=4,300)
- Sweep 2 95.6% (n=4229)
- Sweep 3 95.2% (n=4296)
- Sweep 4 92.6% (n=4144)

### *Research Team*

- David Smith, Lesley McAra
- Susan McVie, Lucy Holmes, Jackie Palmer

### *Study Funding*

- Economic and Social Research Council (1998 - 2002)
- The Scottish Executive (2002- 2005)
- The Nuffield Foundation (2002 - 2005)

## Context

The rate of criminal offending is much higher among males than among females. This sex difference appears across all cultures and historical epochs. It has been documented by self-report data, victim surveys, and police and court records of arrests and convictions in all countries for which such information is available. For example, Wilson and Herrnstein (1985) showed female suspects as a percentage of total suspects for 25 countries in 1963-72. The proportion ranged from 2 per cent in Brunei to 21 per cent in the

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<sup>1</sup> See also Smith et al (2001) and Smith and McVie (2003) for further details of the study.

West Indies. The larger European countries lay around the midpoint of this range: for example, in both France and England & Wales the proportion of female suspects was 14 per cent.

Self-report studies have generally shown a smaller contrast in offending between males and females than official statistics (Hindelang et al., 1981), probably for two main reasons. First, most of these studies are of adolescents, and the contrast in offending is much less in adolescence than later in life ((Moffitt et al., 2001). Second, a high proportion of self-reported offences are trivial ones that do not come to the attention of the police, and the male/female contrast in offending is much greater for serious than for minor offences (see below).

In many countries, the difference in rate of offending between the sexes has narrowed over the past 50 years, although the male preponderance remains very great. In England and Wales, the sex ratio<sup>2</sup> dropped from around 11:1 in 1957 to around 5:1 in 1977, although it has remained fairly steady since. In Scotland it is more difficult to construct a long run of statistics, but in 1983 the ratio of males to females among those with a charge proved against them was 8.2, whereas between 1991 and 2001 it fluctuated between 5.2 and 6.8.<sup>3</sup>

In general, although the ratio of male to female offending has narrowed over the past 50 years and may vary according to factors such as age, ethnicity, and seriousness of the offence, sex nonetheless continues to be one of the strongest correlates of offending behaviour (Rutter et al., 1998; Heidensohn, 1996; Walklate, 2001).

In exploring gender differences in offending two inter-related questions need to be addressed: first, why females are substantially *less* likely to become involved in offending than males; and secondly, whether females who do become involved in offending do so for the same reasons as males, or for different reasons. Daly and Chesney-Lind (1988) have described these questions as respectively the ‘gender ratio problem’ and the ‘generalizability problem’.

## **Key arguments**

### ***(i) Offending patterns***

The difference between males and females was considerably greater for serious delinquency than for a broader measure, and the sex differences were greatest for serious violent offences. The gender gap in offending narrowed between the ages of 12 and 14. This may be because on average girls reach puberty earlier than boys, and hence enter earlier into a period of turbulence associated with delinquency.

### ***(ii) Explaining the gender gap in broad offending***

A regression model was fitted to explain broad offending at sweep 4 (age 15) in terms of a range of variables from six explanatory domains (socio-economic, parenting, school, peers and spare-time activities, moral beliefs, personality, and victimization). In the context of this model, gender was not significantly related to broad delinquency independ-

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<sup>2</sup> Persons cautioned or convicted for indictable offences per 100,000 population.

<sup>3</sup> The 1991 to 2001 figures are per head of population. The 1983 figures are simple counts. Source: Criminal Proceedings in Scottish Courts (annual Statistical Bulletin), Scottish Office/Scottish Executive, Edinburgh.

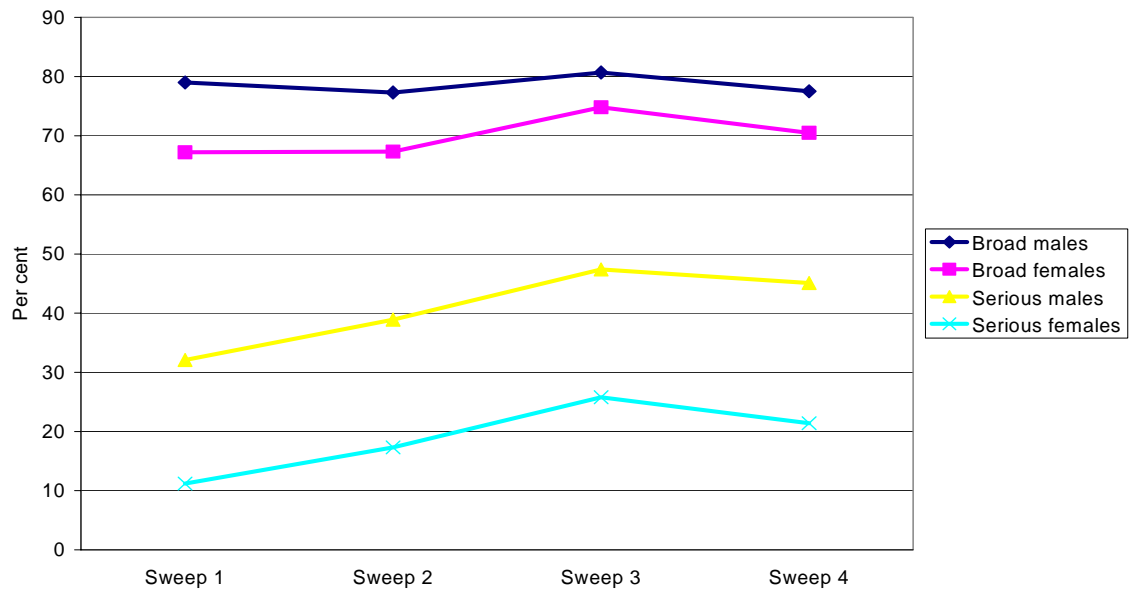
ently of the other explanatory variables. For the most part, the *same* explanatory model was found to apply to both girls and boys. According to this model, offending arises out of *situational opportunities* afforded by spare-time activities (evenings out with friends especially at risky locations such as clubs and amusement arcades) and the social circles in which young people move (mixed sex groups and having a girl- or boyfriend); *victimization* (one of the strongest predictors overall); and *weakened tutelage* (in respect of family, school, and what may be termed the 'ideational order' of conventional moral beliefs). Taken together, these factors explained all of the gender difference in broad offending. There were some detailed differences, however, in the way these factors worked with males and females.

***(iii) Explaining the gender gap in serious offending***

Starting with exactly the same explanatory variables, a regression model was again fitted to explain serious delinquency. In many ways this was quite similar to the model for broad delinquency. The major difference, however, was that being male remained very strongly associated with serious offending after taking account of the effects of a wide range of other explanatory variables. In fact, in this second model, gender was more strongly related to serious offending than was any other variable. Furthermore, a considerable number (six) of the other explanatory variables were related to serious offending in a different way among boys and girls. These findings suggest that for serious offending a *different* explanatory model is likely to apply to boys and girls. Also, there is something about males as males, or a risk factor to which males are more prone, that is implicated in serious offending, but is currently not being measured by any of the variables used in the Edinburgh Study.

## PATTERNS OF OFFENDING

The questions and measures on self-reported delinquency are summarized in the panel overleaf. Figure 1 shows the prevalence of broad and serious delinquency for boys and girls separately over the four sweeps.



**Figure 1: Prevalence of broad and serious delinquency**



#### REFERENCE PERIOD

Sweep 1: 'ever'

Sweeps 2-4: last 12 months (the last school year and summer holidays)

#### DELINQUENCY

1. fare dodging
2. shoplifting
3. noisy or cheeky in public
4. joyriding\*
5. theft at school
6. carrying a weapon\*
7. writing or spraying graffiti
8. damage to property\*
9. housebreaking\*
10. robbery (theft with force or threats)\*
11. theft from home
12. fire-raising\*
13. assault
14. car-breaking\*
15. truancy
16. hurting or injuring animals<sup>+</sup>
17. selling illegal drugs<sup>+</sup>
18. racially abusing someone<sup>+</sup>

\*Items included in the measure of 'serious delinquency'. These are the items rated as most serious by respondents at sweep 2. All 15 items are included in the measure of 'broad delinquency'.

<sup>+</sup>Additional items included in the inclusive measure of broad delinquency at sweep 4 (used in the correlation and regression analyses only)

#### PREVALENCE

The percentage of cohort members engaging in any one of the delinquent acts (or serious delinquent acts) in the reference period.

#### VARIETY MEASURES

A count of the number of items (e.g. the number of different types of delinquency the person had engaged in).

#### VOLUME MEASURES

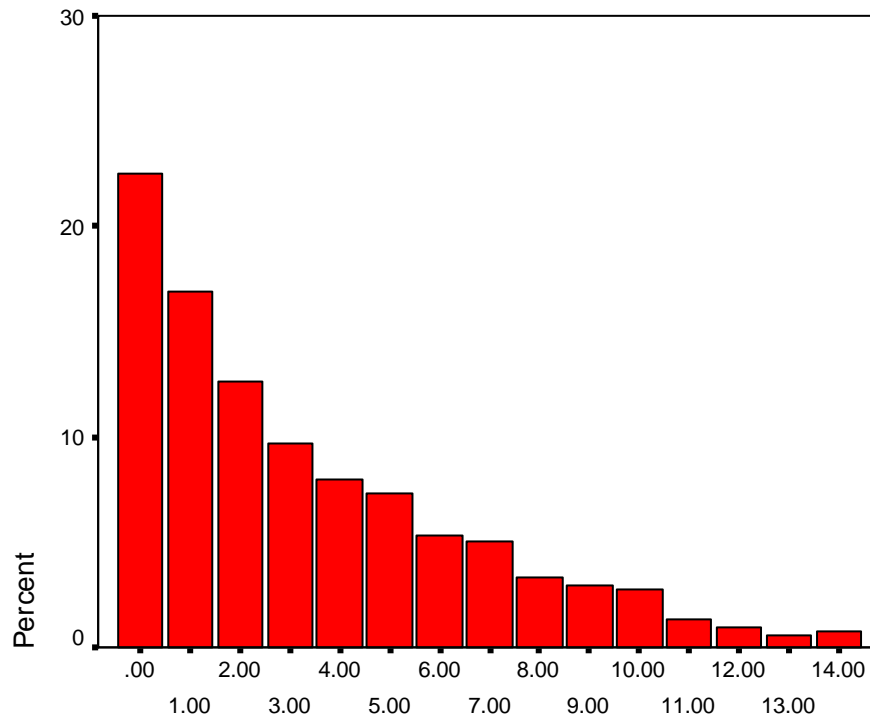
A count of the number of occasions (e.g. the number of occasions on which the person had engaged in a delinquent act).

In the case of broad delinquency, prevalence (the proportion who had engaged in any one of the 15 types of delinquency in the reference period) was around 80 per cent for boys and around 70 per cent for girls in each of the four sweeps. The gap between boys and girls narrowed slightly at sweeps 3 and 4. The majority of both boys and girls reported involvement in only one or two incidents of trivial, non-serious delinquency, at every sweep.

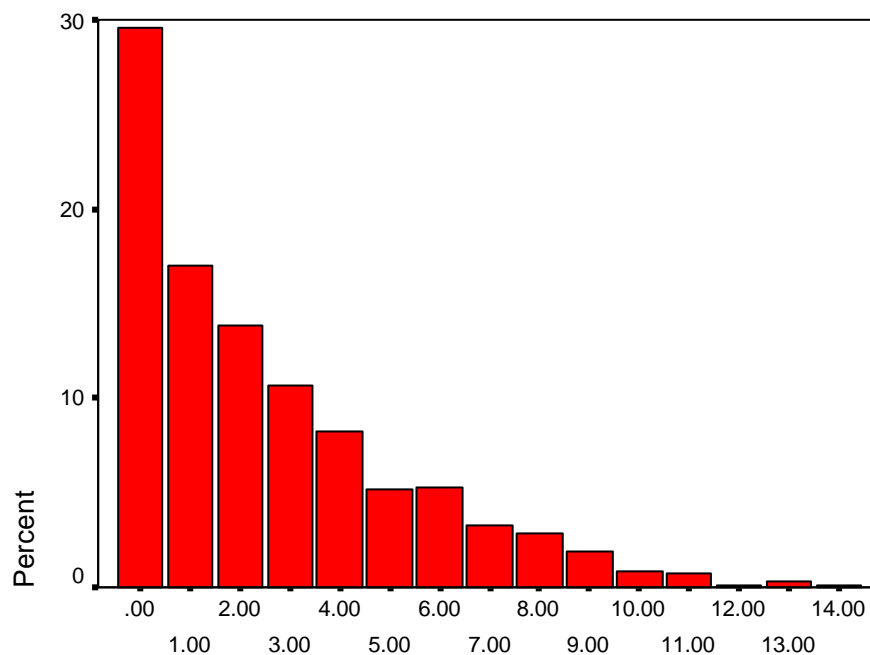
The gap in prevalence of serious delinquency was considerably wider, and if anything it widened over the four sweeps. Serious delinquency reached a peak at sweep 3 (age 14), when prevalence was 47.4 per cent among boys and 25.8 per cent of girls.

Much more sensitive indicators are counts of either the types of delinquency in which someone had engaged (a variety measure) or the number of occasions on which they had engaged in an act of delinquency (a volume measure). Figures 2 to 5 show the distribu-

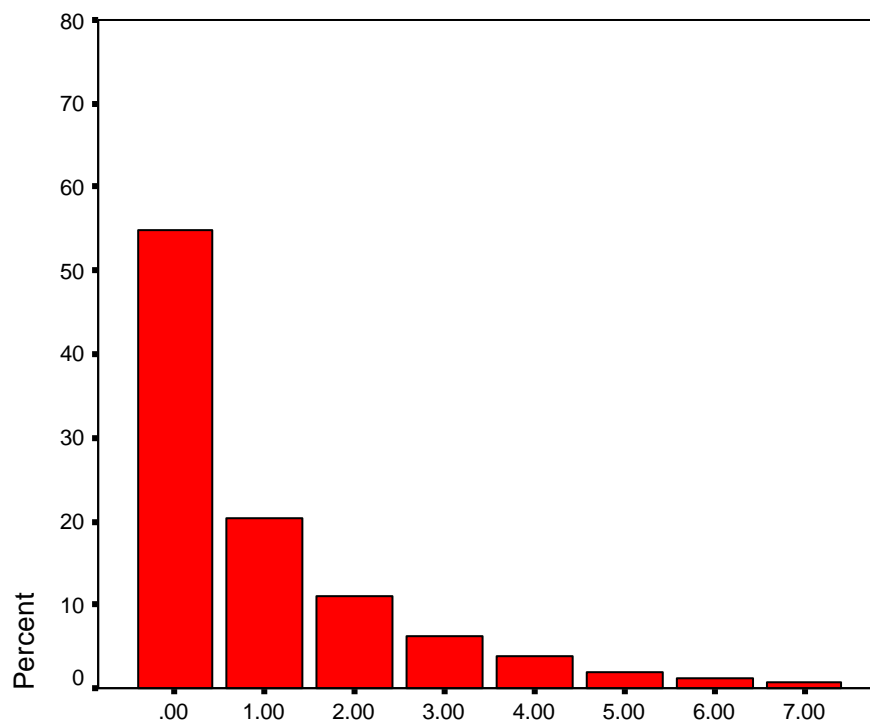
tion of the variety of delinquency measures for males and females at sweep 4 (age 15). In the case of broad delinquency (figures 2 and 3), the differences between the distributions for boys and girls at the age of 15 were fairly modest; the most obvious differences were in the proportion of zeros, and the proportion with very high values. In the case of serious delinquency (figures 4 and 5), the differences between boys and girls were more marked, and extended throughout the distribution.



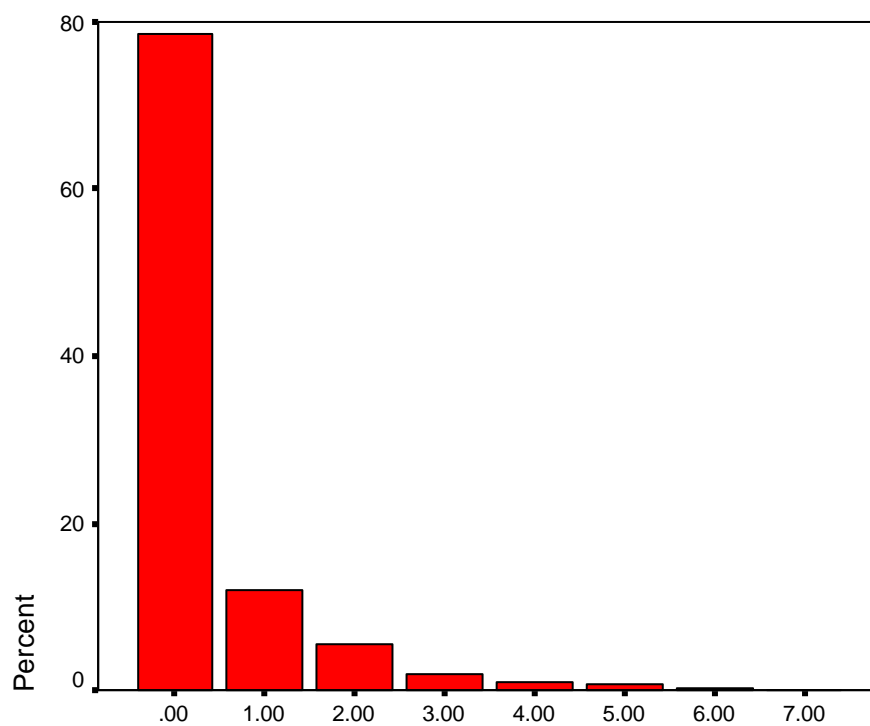
**Figure 2: Males—variety of broad delinquency at sweep 2**



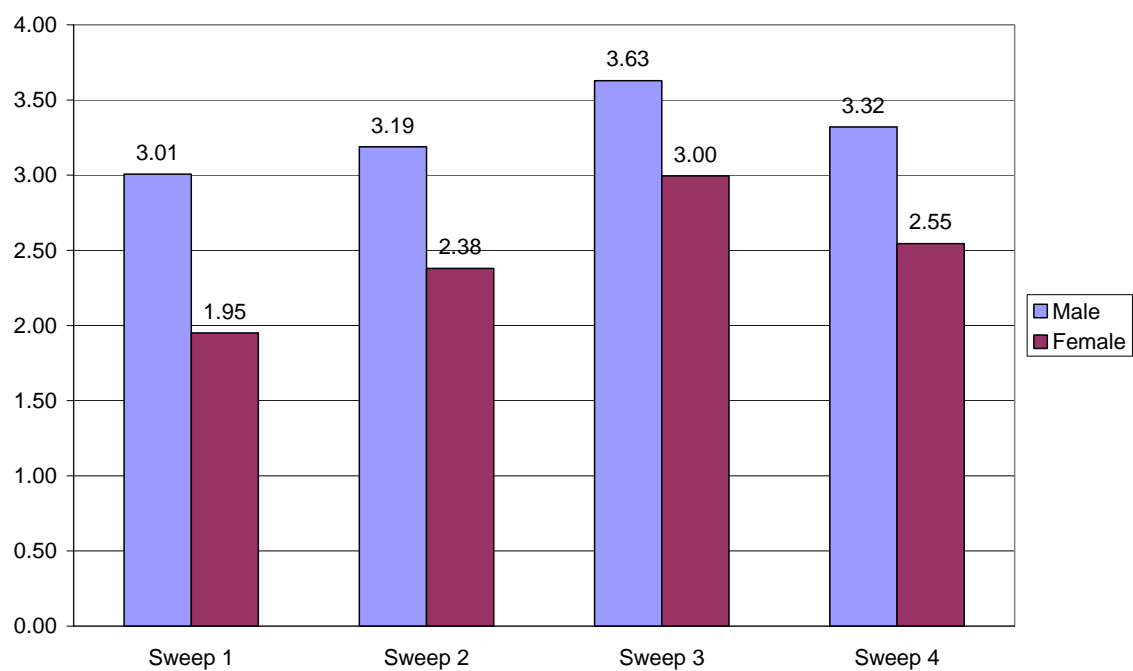
**Figure 3: Females—variety of broad delinquency at sweep 2**



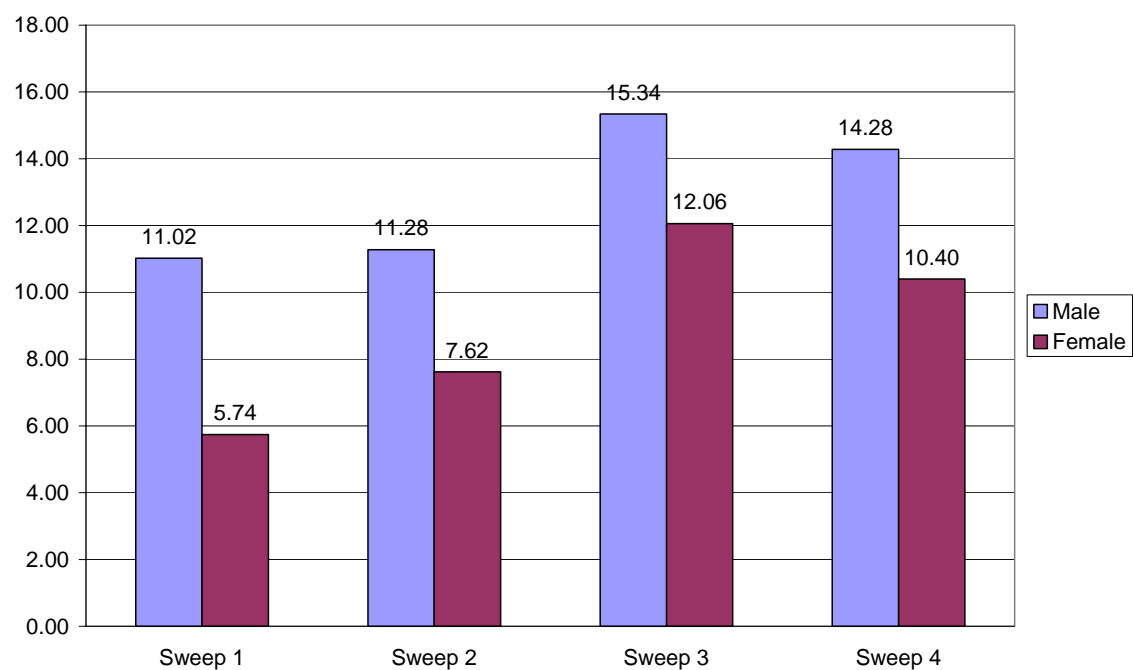
**Figure 4: Males—Variety of serious delinquency at sweep 4**



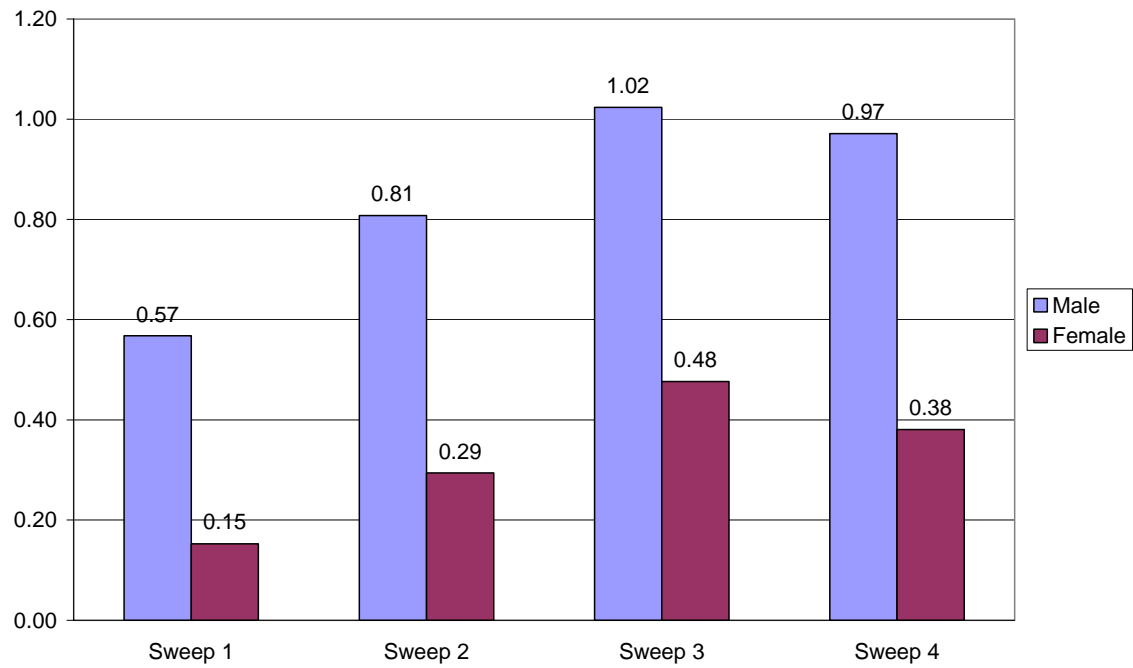
**Figure 5: Females—Variety of serious delinquency at sweep 5**



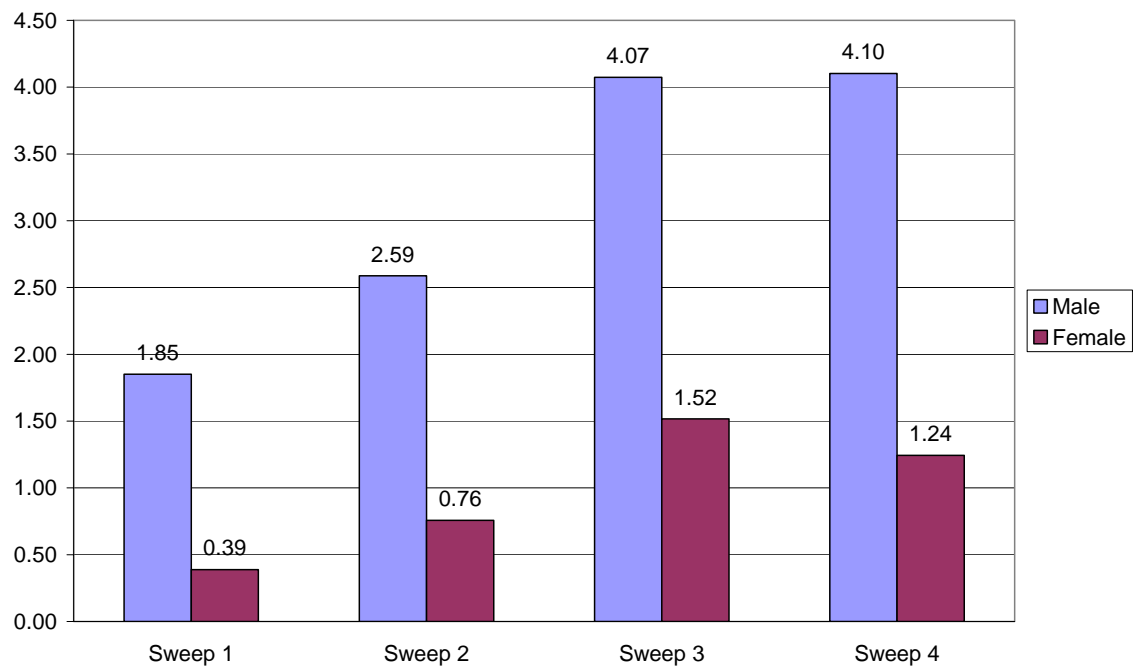
**Figure 6: Mean variety of broad delinquency**



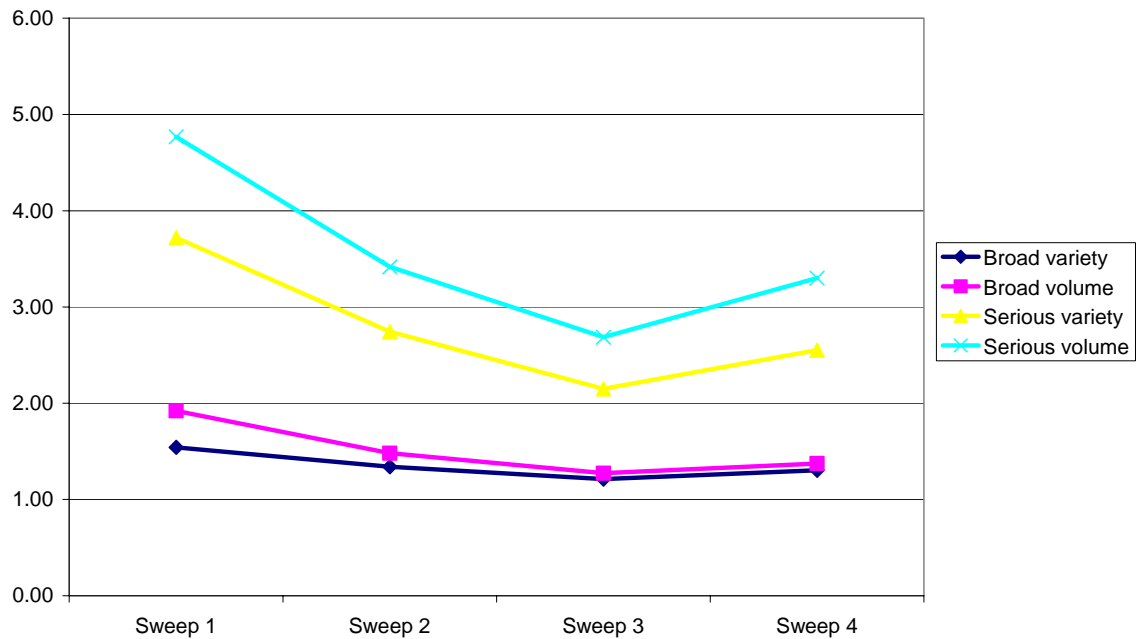
**Figure 7: Mean volume of broad delinquency**



**Figure 8: Mean variety of serious delinquency**



**Figure 9: Mean volume of serious delinquency**



**Figure 10: Male/female ratio of various delinquency measures**

Figures 6 to 9 show the averages (means) of these measures at each sweep for boys and girls separately. Figure 10 shows the ratio between the male and female mean on each measure. In the case of broad delinquency, the male/female ratios were similar for the variety and volume measures, especially after sweep 1. The volume measure of broad delinquency was about twice as high for males as females at sweep 1, then dropped to about one and a half times as high at sweep 2, and thereafter to about one and a quarter times as high. Thus the gap in broad delinquency narrowed considerably, and became quite small at the ages of 14 and 15. As also shown by Figure 10, the gap in serious delinquency was much wider than in broad delinquency over the four sweeps.

The volume measure showed a larger male/female ratio than the variety measure, which means that boys not only engaged in more types of serious delinquency, but also repeated them more often than girls. The gap between girls and boys in serious delinquency narrowed quite markedly between sweeps 1 and 3 (age 12 to 14) but then widened again. Figures 5 to 9 show that on all measures delinquency rose sharply among both boys and girls through sweeps 1 to 3, then fell. The shifts in the ratios between boys and girls occurred because delinquency rose more quickly among girls than among boys between the ages of 12 and 14, then fell more quickly among girls at age 15. The likely explanation is that girls mature earlier than boys (sexually, physically, and emotionally) and therefore reach and pass through the turbulent period associated with offending at a younger age.

Although these summary measures are useful, they mask some interesting differences between boys and girls on individual items. As shown in Table 1, theft from home, writing graffiti, and (to a lesser extent) truancy were more prevalent among girls than boys. Delinquent acts that were *much* more prevalent among boys than girls were carrying a weapon, housebreaking, robbery, cruelty to animals, joyriding, theft from cars, and vandalism. Fare-dodging, breach of the peace, and shoplifting were all very common, and were almost equally prevalent among girls and boys.

**Table 1: Prevalence of specific self-reported delinquent acts at sweeps 2 and 4**

	<i>Percentages</i>			
	<b>Sweep 2</b>		<b>Sweep 4</b>	
	<b>Boys (percent)</b>	<b>Girls (percent)</b>	<b>Boys (percent)</b>	<b>Girls (percent)</b>
Fare dodging	**28	24	*33	29
Theft from home	***17	22	***14	19
Theft from school	(NS)10	9	***9	6
Graffiti	***29	40	***33	39
Vandalism	***22	10	***27	12
Breach of peace	***43	37	*40	36
Truancy	(NS)25	23	***41	47
Shoplifting	***30	23	*25	21
Joyriding	***7	2	***10	6
Theft from motor vehicle	***3	0.4	***7	2
Housebreaking	***5	1	***6	1
Fire-raising	***19	8	***14	6
Assault	***59	33	***43	21
Carrying a weapon	***24	7	***30	10
Robbery	*2	1	***4	0.8
Cruelty to animals	***9	3	***9	2
Selling drugs			***10	4
Racial abuse			**3	1

\*\*\*Significant difference at 99.9% level of confidence

\*\*Significant difference at 99% level of confidence

\*Significant difference at 95% level of confidence

NS: Non-significant

Shaded areas: where prevalence amongst girls is higher

## CORRELATES OF DELINQUENCY IN BOYS AND GIRLS

The Edinburgh Study has collected information on a wide range of topics as part of the effort to understand the causes of youth crime and how offending emerges in the process of development from childhood to adulthood. This paper considers six *domains of explanation*, each one covered by a number of more detailed and specific measures. The socio-economic domain is concerned with deprivation as a possible cause of crime, both at the level of the individual family and at the level of the neighbourhood. The two measures of the parenting domain covered supervision (the parent knowing where the child is, with whom and doing what) and conflict between parents and child. The three measures of the school domain were concerned with the child's bonds to school (attachment to school, and relations with teachers) and the parents' involvement with school. The measures of peers and spare-time activities covered 'hanging about', risky spare-time activities, and friendships and love relationships with the opposite sex. A single composite measure of moral beliefs indexed the strength of adherence to conventional moral standards. There were four standard personality measures. Finally, measures of victimization covered both 'ordinary' crime victimization and harassment by adults.

**Table 2: Correlates of delinquency at sweep 4 (age 15)**

*Correlation coefficients (Spearman's rho)*

		<b>Broad delinquency</b>		<b>Serious delinquency</b>	
<b>Domain</b>	<b>Variable</b>	<b>Boys</b>	<b>Girls</b>	<b>Boys</b>	<b>Girls</b>
Socio-economic	Social class, manual/unemployed <sup>+</sup>	-.085	-.210	-.086	-.157
	Neighbourhood deprivation	.156	.199	.131	.152
	Family type, two-parent <sup>+</sup>	.160	.208	.143	.175
Parenting	Parental supervision	-.474	-.479	-.395	-.320
	Conflict with parents	.336	.342	.238	.228
School	Attachment to school	-.292	-.344	-.250	-.247
	Relations with teachers	-.012 NS	-.062	-.025 NS	-.044
	Parents' involvement with school	-.248	-.383	-.208	-.264
Peers, spare-time activities	Has girl-friend/boyfriend <sup>+</sup>	.334	.392	.278	.249
	Friends of opposite sex <sup>+</sup>	.167	.369	.152	.276
	Evenings out with friends	.302	.331	.268	.194
	Hanging about	.314	.404	.273	.275
	Risky spare-time activities	.347	.422	.319	.331
Moral beliefs	OK to lie/steal/fight	.535	.581	.453	.401
Personality	Self-esteem	-.097	-.228	-.067	-.166
	Alienation	.071	.083	.047	NS .015
	Impulsivity	.332	.456	.262	.284
	Risk-taking	.477	.482	.404	.312
Victimization	Volume of victimization	.440	.375	.381	.326
	Adult harassment	.379	.372	.358	.269

<sup>+</sup>Categorical variable (yes/no treated as 1/0 for calculation of correlation coefficient).

**Notes**

Broad delinquency: volume measure based on 18 items (see panel).

Serious delinquency: volume measure based on 7 items (see panel).

N for each cell varies between about 1800 and 2000 (depending on values missing for the pair of variables).

Coefficients above .05 are significant at the 95% level of confidence or higher. Coefficients above .09 are significant at the 99.9 per cent level of confidence or higher. Coefficients that are not significant at the 95% level are marked NS.



Table 2 describes the relationships between each of these explanatory measures and delinquency at sweep 4, when cohort members were around 15 years old. Separate results are shown for the measure of broad delinquency (based on 18 items, see earlier panel) and for the measure of serious delinquency (based on the seven starred items in the earlier panel). The statistic quoted is a correlation coefficient, which indicates the strength of the association between each explanatory variable and the measure of delinquency.<sup>4</sup> A coefficient of zero would indicate no relationship between two measures, whereas a coefficient of 1 would indicate a perfect correlation. A coefficient of .5 would indicate a very strong relationship in the context of social science research. With rare exceptions, the explanatory measures, like the measures of delinquency, were taken at sweep 4, so the table illustrates the pattern of relationships between explanatory variables and delinquency at the same time period.<sup>5</sup> The table shows separate results for boys and girls. This gives a first indication of whether delinquency in boys and girls is associated with the same activities, attitudes, and personal characteristics.

Measures in all six of the domains were significantly associated both with broad and with serious delinquency, suggesting that explanations for delinquency are extremely complex. Although both criminological and ‘folk’ theories of crime tend to emphasize deprivation and lack of material resources, it was in the socio-economic domain that the correlations with delinquency were weakest. Moral beliefs, victimization, parenting, and one of the personality dimensions—risk-taking—were very strongly associated with delinquency. Peers and spare-time activities, impulsivity, and attachments to school were also quite strongly associated with delinquency.

Generally there was a similar pattern of findings for broad and serious delinquency, but most of the correlations were considerably higher in the case of broad delinquency. This shows that measures in these six domains are more successful in explaining broad than serious delinquency, and hence suggests that missing factors not covered by the study are important in explaining serious delinquency. As argued by Moffitt (1990) possible missing factors are psychological disabilities (for example in the ability to organize and plan ahead) associated with specific neurophysiological deficits.

In general, the pattern of findings was similar for boys and girls, suggesting that for the most part the same model of explanation for delinquency is likely to apply to both. However, there were some interesting and important exceptions. The socio-economic factors were more closely associated with delinquency among girls than boys, indicating that material deprivation may be a more important factor underlying female youth offending. There were some indications that weak attachments to school (especially parents’ involvement) may be more closely linked with delinquency in girls than in boys. Having friends of the opposite sex was much more closely linked with delinquency in girls than in boys, and to a lesser extent so were situational factors such as hanging about and risky spare-time activities. Finally, low self-esteem was more closely linked with delinquency in girls than in boys. In summary, an explanatory model for delinquency in girls would place particular emphasis on weakened tutelage, especially frail links with school, peer influence of boys in the context of unsupervised spare-time activities, and involvement with these groups as a means of raising low self-esteem.

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<sup>4</sup> The statistic quoted is a non-parametric coefficient, which is appropriate because, as shown by figures 2 to 5, the distributions of both delinquency variables are highly skewed.

<sup>5</sup> Three of the personality measures (alienation, risk-taking, and impulsivity) were taken from sweep 3, but these do not change rapidly over time.

## AN EXPLANATORY MODEL FOR DELINQUENCY IN BOYS AND GIRLS

Table 2 above shows how each explanatory variable individually is associated with delinquency. To take the analysis one step further, we fitted two ordinal regression models, one to explain broad delinquency and the other to explain serious delinquency (at sweep 4 in both cases).<sup>6</sup> The variables fed into these models were exactly the same as shown in the table of correlations above (table 2). The models estimate the effect of each of the explanatory variables as a predictor of delinquency, after taking into account the effect of all of the others. They therefore estimate the *independent* effect of each variable on delinquency. It should be emphasized, however, that these are contemporaneous models (the explanatory and outcome variables described the same time period) not longitudinal models showing the effects of parenting, school, etc. on *later* delinquency.

We started by entering all of the explanatory variables shown in table 2 into the model. In addition, we wanted to test whether the same model would apply equally well to boys and girls. To do this, we entered a term for the interaction between gender and social class, and similar terms for the interactions between gender and each of the other explanatory variables. If an explanatory variable had a different effect on delinquency for girls and boys, then the relevant interaction term would be significant. We then successively deleted terms that did not have a significant effect on delinquency, until we arrived at the two final models that are shown in tables 3 and 4. In other words, we used a backwards stepwise method of regression modelling.

Looking, first, at the model for broad delinquency (table 3), the first thing to note is that gender in itself was not significant after taking account of the other explanatory variables. However, two of the explanatory factors had different effects on delinquency in boys and girls, as shown by the two significant interaction terms. These suggest that low self-esteem and 'hanging about' increased delinquency more in girls than in boys. For the most part, therefore, the same explanatory model of broad delinquency applied to boys and girls, but an explanation for delinquency in girls would place more emphasis on raising self-esteem by hanging about with boys. Social class was not significantly related to broad delinquency in the context of the model, although the level of deprivation in the neighbourhood was. All except two of the other factors were significant, so the explanatory model proposed is highly complex. The most important factors explaining broad delinquency were moral beliefs, victimization, having a girlfriend or boyfriend, a risk-taking personality, and low parental supervision.

By contrast, in the model explaining serious delinquency, gender had a larger effect than any other variable.<sup>7</sup> This shows that the explanatory models for broad and serious delinquency are very different in one important respect. A second important difference is that the parenting and school variables had less effect on serious than on broad delinquency. A third difference is that six of the interaction terms for gender with other explanatory variables were significant in the model for serious delinquency (compared with two for

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<sup>6</sup> We used ordinal regression because our delinquency variables are highly skewed, making multiple regression unsuitable. In ordinal regression, the outcome (dependent) variable is a set of categories ordered from high to low: in this case, five categories from high to low volume of broad delinquency, or four categories from high to low volume of serious delinquency.

<sup>7</sup> However, there is a problem in comparing the effect of a categorical variable (like gender) with the effect of a continuous variable (like moral beliefs). Very weak beliefs in conventional values would have more effect on delinquency than being male rather than female.

the broad delinquency model). These findings show that there are some important differences between the models needed to explain serious delinquency in boys and girls. Also, boys are more likely than girls to be involved in serious delinquency at the age of 15 for reasons not captured by the 20 measures covering six explanatory domains that were included in the present analysis.

The interaction terms show how the explanatory model for serious delinquency needs to be different for girls. The factors that increased serious delinquency more in girls than in boys were: having friends of the opposite sex; belonging to the manual social class group; having low self-esteem; having weak parental supervision; and having weak belief in conventional moral standards. Also, going out with friends in the evenings increased serious delinquency in boys, but not in girls.

**Table 3: Ordinal regression model, outcome: broad delinquency at sweep 4**

Domain	Variable	Standardized estimate	Standard error	Significance
Gender	Gender, male <sup>+</sup>	0.08	0.08	0.289
Socio-economic	Social class, manual/unemployed <sup>+</sup>	Dropped	-	NS
	Neighbourhood deprivation	0.20	0.04	0.000
	Family type, two-parent <sup>+</sup>	-0.19	0.08	0.012
Parenting	Parental supervision	-0.44	0.04	0.000
	Conflict with parents	Dropped	-	NS
School	Attachment to school	-0.16	0.04	0.000
	Relations with teachers	0.10	0.04	0.004
	Parents' involvement with school	-0.20	0.04	0.000
Peers, spare-time activities	Has girlfriend/boyfriend <sup>+</sup>	0.58	0.08	0.000
	Friends of opposite sex <sup>+</sup>	0.32	0.08	0.000
	Evenings out with friends	0.13	0.04	0.002
	Hanging about	0.16	0.06	0.005
	Risky spare-time activities	0.16	0.06	0.005
Moral beliefs	OK to lie/steal/fight	0.79	0.05	0.000
Personality	Self-esteem	-0.11	0.05	0.036
	Alienation	Dropped	-	NS
	Impulsivity	0.19	0.04	0.000
	Risk-taking	0.38	0.04	0.000
Victimization	Volume of victimization	0.52	0.05	0.000
	Adult harassment	0.25	0.04	0.000
Interactions with gender	Male*self-esteem	0.18	0.08	0.016
	Male*hanging about	-0.17	0.07	0.020

<sup>+</sup>Categorical variable, estimate applies to the named category.

**Table 4: Ordinal regression model, outcome: serious delinquency at sweep 4**

Domain	Variable	Standardized estimate	Standard error	Significance
Gender	Gender, male <sup>+</sup>	1.49	0.17	0.000
Socio-economic	Social class, manual/unemployed <sup>+</sup>	0.34	0.15	0.020
	Neighbourhood deprivation	0.19	0.05	0.000
	Family type, two-parent <sup>+</sup>	-0.21	0.09	0.021
Parenting	Parental supervision	-0.17	0.08	0.042
	Conflict with parents	Dropped	-	NS
School	Attachment to school	-0.14	0.05	0.005
	Relations with teachers	Dropped	-	NS
	Parents' involvement with school	-0.17	0.05	0.001
Peers, spare-time activities	Has girlfriend/boyfriend <sup>+</sup>	0.48	0.11	0.000
	Friends of opposite sex <sup>+</sup>	0.74	0.18	0.000
	Evenings out with friends	-0.04	0.09	0.683
	Hanging about	Dropped	-	NS
	Risky spare-time activities	0.33	0.04	0.000
Moral beliefs	OK to lie/steal/fight	0.85	0.09	0.000
Personality	Self-esteem	-0.21	0.07	0.003
	Alienation	-0.13	0.05	0.008
	Impulsivity	0.15	0.05	0.004
	Risk-taking	0.32	0.05	0.000
Victimization	Volume of victimization	0.49	0.05	0.000
	Adult harassment	0.21	0.04	0.000
Interactions with gender	Male*friends of opposite sex	-0.43	0.21	0.037
	Male*manual/unemployed social class	-0.43	0.18	0.017
	Male*parental supervision	-0.22	0.10	0.029
	Male*self-esteem	0.22	0.10	0.022
	Male*OK to lie/steal/fight	-0.29	0.11	0.007
	Male*evenings out with friends	0.26	0.11	0.018

<sup>+</sup>Categorical variable, estimate applies to the named category.

## CONCLUSIONS

The Edinburgh Study findings confirmed that boys were considerably more likely than girls to be involved in delinquency between the ages of 12 and 15. Delinquency increased between the ages of 12 and 14, then started to decline, but the increase was more rapid among girls, so the gap in offending between girls and boys was at its lowest at the age of 14. There was much more difference between boys and girls in serious delinquency than on a broader measure including many trivial incidents. Despite this overall pattern, there were some specific kinds of delinquency—*theft from home, writing graffiti, and truancy*—that were more common among girls than boys.

The findings show that a very large number of factors in different domains play a role in explaining why some young people become more deeply involved in delinquency than others. Taken together, these factors provide a good explanation for the modest difference between boys and girls on the broad measure of delinquency. Most important among the explanatory factors were moral beliefs, victimization, and mixing with friends, especially of the opposite sex, in potentially risky situations. A risk-taking personality and lack of parental supervision were also important. Boys offended more than girls on the broad measure of delinquency because they were more likely to have these characteristics: weak moral beliefs, experience of being a crime victim, a risk-taking personality, and so on. For the most part, the same explanatory model for broad delinquency applied to boys and girls, but there was some evidence that offending in girls was more strongly related to low self-esteem and to peer influence of the opposite sex in risky situations.

By contrast, the much larger difference between boys and girls in serious delinquency was not explained by the large number of explanatory factors captured in the Edinburgh Study. Also, the explanatory model for girls was in this case more substantially different from the one that applied to boys. These differences in the explanatory models cannot be neatly summarized, because they cross several domains of explanation. These findings probably mean that much of the difference between boys and girls in serious offending is explained by a factor not captured by this study which is more common in boys than girls. According to Moffitt (1990), this factor could be a deficit in the brain's executive functions, affecting the ability to organize and plan ahead.

These findings fit well with Moffitt's (1993) distinction between adolescence-limited and life-course persistent antisocial behaviour. According to this theory, offending that is limited to adolescence is normal, whereas antisocial behaviour and offending that continues throughout the life course is pathological. More recently, Moffitt et al. (2001) have also argued that the neuropsychological deficits that lead to life-course persistent delinquency are much more common in boys than girls, whereas the factors underlying 'normal' offending in adolescence are the same in the two sexes, and almost equally common. This fits with the Edinburgh Study findings if it is assumed that our 'broad delinquency' is dominated by adolescence-limited offending, whereas our 'serious delinquency' is dominated by life-course persistent offending.

A policy implication of these findings is that much youth offending should be treated as natural and normal, and will fade as young people grow into adulthood provided that there is no drastic response to the offending that is seriously damaging to the teenager. This applies equally to girls and boys. On the other hand, serious offending by some young people springs from deep-seated psychological deficits. Here the causes of of-

fending in boys and girls are likely to be more fundamentally different. Although the present findings do not show what remedial action can be effective, they suggest that it needs to be tailored to the specific needs of boys and girls.

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